



POMS for FIFE Experiments

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FIFE Workshop

June 21st & 22nd 2016



Background

- POMS was initially developed for the OPOS group to help them manage job submissions for multiple experiments.
- Now we are working to make POMS into a tool that the experiments can use directly to help track their production computing.

What Can POMS Do?

POMS can:

- Track what processing needs to be done (“Campaigns”)
- Track job submissions made for above
- Automatically make job submissions for above
- Launch recovery jobs for files that didn't process automatically
- Launch jobs for dependent campaigns automatically to process output of previous passes.
- Interface with SAM to track files processed by submissions and Campaigns
- Provides “Triage” interface for examining individual jobs/logs and debugging failures.

Configuring POMS

Telling POMS about your software and scripts is done through a 5-tiered configuration system

- Experiment name and users added to POMS (by admins)
- Launch Template -- login and setup info to run jobs (also adding POMS special principal to appropriate .k5login files)
- “Campaign Definition” for types of jobs you run -- how to launch a MonteCarlo job, or a Reconstruction job, etc.
- Specific Campaign -- we want to run Reconstruction on these three specific datasets...
- You can also configure what types of recovery jobs should be run, and what campaigns depend on others.

Starting Jobs

You can start your jobs through POMS, or configure your existing scripts to tell POMS about job launches.

- Within POMS, you can simply choose your campaign, and click a link to do a job submission.
- Or you can configure a cron-job to launch your campaign jobs through POMS.
- Or you can use the `poms_client` and/or `poms_jobsub_wrapper` packages to set things up so POMS will monitor jobs you launch yourself.

You can do the latter, and never tell POMS how to launch a job, but then it can't launch recovery jobs, etc. either.

Watching Jobs and Campaigns

You can keep track of what is going on through POMS.

- You can check the file delivery statistics for each submission.
- You can examine summaries to look for problems by site, software version, node (“black holes”), etc.
- You can watch the relative efficiency of jobs
- You can watch the jobs in each submission
- You can click through to specific jobs, and see their status changes, read their log files, etc.

Demo

POMS

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Search

Dashboard ?

See everything up and running in real time

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Services

Job launches: allowed ▶ Allow ■ Hold

- ▶ **fifemon_DCach**e (2/2) ✕
- ▶ **fifemon_FifeBatch** (0/2) ✓
- ▶ **fifemon_SAM** (0/5) ✓
- ▼ **indca_DCach**e (1/13) ✕

[source webpage](#)

Key:

- Good Component** (0/total) ✓
- Warn Component** (num_failed/total) ⚠
- Failed Component** (num_failed/total) ✕
- Unknown Component (0/total) Ⓞ

Demo

Space usage in persistent area by Storage group

Data generated on 2016-06-17 06:54:26 (updated daily)

persistent by storage group

Storage Group	Total Used [GiB]	Total Available [GiB]	Usage [%]	PoolGroup	Gratia Usage plot (last 30 days)
annie	3,907	49,357	7.92	AnnieAnalysisPools	annie
chips	0	11,176	0.00	ChipsAnalysisPools	chips
darkside	47,683	48,427	98.46	DarksideAnalysisPools	darkside
des	93,159	188,123	49.52	DesAnalysisPools	des
dune	102,788	139,705	73.58	DuneAnalysisPools	dune
genie	31	8,382	0.37	GenieAnalysisPools	genie
lariat	30	11,176	0.27	LariatAnalysisPools	lariat
lbne	102,788	139,705	73.58	DuneAnalysisPools	lbne
minerva	65,581	188,147	34.86	MinervaAnalysisPools	minerva
minos	20,781	233,763	8.89	MinosAnalysisPools	minos
mu2e	21,688	139,703	15.52	Mu2eAnalysisPools	mu2e
nova	140,385	298,963	46.96	NovaAnalysisPools	nova
uboone	71,606	90,340	79.26	UbooneAnalysisPools	uboone

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Jobs by user_exe_exit_code,name,experiment ?

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🕒 2016-06-16 10:57 to 2016-06-17 10:57

[<previous 1 days](#) | [next 1 days >](#)



user_exe_exit_code	name	experiment	count
65	Nova raw2root keepup	nova	1
137	LARIAT Raw2Digits	lariat	1
1	LARIAT Raw2Digits	lariat	1

Demo

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Home / Jobs by exit code

Jobs by user_exe_exit_code,node_name,experiment ?

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🕒 2016-06-16 10:58 to 2016-06-17 10:58

<previous 1 days | next 1 days >

📅

node_name x user_exe_exit_code x experiment x

user_exe_exit_code	node_name	experiment	count
137	fnpc7026.fnal.gov	lariat	1
65	fnpc6027.fnal.gov	nova	1
1	fnpc7023.fnal.gov	lariat	1

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Home / All Jobs

Jobs ?

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2016-06-16 10:58 to 2016-06-17 10:58

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Filter Jobs

Search...

1 records

Job fields								
info	jobsub job id	node name	cpu type	host site	status	output files declared	user exe exit code	inp file na
	11100550.0@fifebatch2.fnal.gov	fnpc6027.fnal.gov	AuthenticAMD@4599.0	FNAL	Completed	False	65	No

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Home / All Jobs

Jobs ?

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2016-06-16 10:58 to 2016-06-17 10:58

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Filter Jobs

Search_

1 records

1 fields

id	name	campaign definition id	vo role	cs last split	cs split type	cs split dimensions	dataset	software version	active	launch id	param overrides
	Nova raw2root keepup	0	Production	None	None	None	unknown	516-02-02	True	6	

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Home / Campaigns / Campaign Nova raw2root keepup / Jobs in Submission / Triage job 11100550.0@fifebatch2.fnal.gov

Job Triage ?

triage your jobs

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Job Triage:

Status	Host Site	Node Name	CPU	Jobsub_Job_ID	Task ID	Usr Exe Exit Code	Updated
✓ Completed	FNAL	fnpc6027.fnal.gov	AuthenticAMD@4599.0	11100550.0@fifebatch2.fnal.gov	16444	65	2016-06-17 02:03:59.788313-05:00

SAM Project

http://samweb.fnal.gov:8480/station_monitor/nova/stations/nova/projects/pbuitrag-pbuitrag-raw2root-keepup-Fermigrid-1900-S16-02-02-neardet-others-15_days_ago-20160617_0155

Logs

Refresh 

```
pbuitrag-pbuitrag-raw2root-keepup-Fermigrid-1900-S16-02-02-neardet-others-15_days_ago-20160617_0155.sh
pbuitrag-pbuitrag-raw2root-keepup-Fermigrid-1900-S16-02-02-neardet-others-15_days_ago-20160617_0155.sh_20160617_015555_1225221_0_1_cmd
pbuitrag-pbuitrag-raw2root-keepup-Fermigrid-1900-S16-02-02-neardet-others-15_days_ago-20160617_0155.sh_20160617_015555_1225221_0_1_wrap.sh
pbuitrag-pbuitrag-raw2root-keepup-Fermigrid-1900-S16-02-02-neardet-others-15_days_ago-20160617_0155.sh_20160617_015555_1225221_0_1_log
pbuitrag-pbuitrag-raw2root-keepup-Fermigrid-1900-S16-02-02-neardet-others-15_days_ago-20160617_0155.sh_20160617_015555_1225221_0_1_11100550.0
```

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Q

20160617_0155.sh 20160617_015555_1225221_0_1_cluster.111005500.err
.empty_file

General Specifications

Experiment	nova
Campaign	Nova raw2root keepup
Command Executed	jobsub_submit -N 1 --resource-provides=usage_model=DEDICATED --disk=10000MB --memory=1900MB --expected-lifetime=10800s -G nova -e SAM_PROJECT_NAME -e SAM_STATION -e IFDH_BASE_URI -e IFDH_DEBUG -e EXPERIMENT -e GRID_USER --role=Production file://nova/app/condor-exec/pbuitrag/pbuitrag-raw2root-keepup-Fermigrid-1900S16-02-02-neardet-others-15_days_ago-20160617_0155.sh --limit 20 --multifile --export DEST=/pnfs/nova/scratch/fts/dropbox --config daq2rawdgitjob.fcl --source /grid/fermiapp/nova/novaart/nova svn/setup/setup_nova.sh -rS16-02-02 -b:maxopt -X runNovaSAM.py --hashDirs --jsonMetadata --copyOut --logs --zipLogs --outTier out1artdaq
Task Def Name	Nova raw2root keepup ND numi
Task Status	Located
VO Role	Production

History

Event	Timestamp
Idle	2016-06-17 01:56:56.274186-05:00
running: user code	2016-06-17 01:59:52.285645-05:00
running: copying files in	2016-06-17 02:00:04.048832-05:00
running	2016-06-17 02:00:06.912749-05:00
Running	2016-06-17 02:01:22.196198-05:00
running: user code failed	2016-06-17 02:02:11.751599-05:00
Running	2016-06-17 02:02:16.633090-05:00

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Campaigns

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Campaign NOvA Reco Keepup

Campaign

Name: NOvA Reco Keepup
Experiment: nova
Dataset: unknown
Software Version: unknown
Created: 2015-11-20 15:30:00-06:00
Creator: mengel@fnal.gov
VO Role: Production
Param Overrides: None
cs_split_type: None
cs_split_dimensions: None
cs_last_split: None
Active: True

Actions

- [Job Efficiency Histogram](#)
- [Day by Day Spreadsheet](#)
- [Submission Time Bars](#)
- [Campaign Submission Files](#)
- [Launch Campaign Jobs Now](#)
- [Kill Jobs for Campaign](#)
- [Schedule Future Job Launches](#)

Campaign Definition

Name: NOvA Reco Keepup
Creator: mengel@fnal.gov
Created: 2015-11-20 15:30:00-06:00
Launch Script: reco_launch
Definition Parameters: []
Input Files Per Job: 1
Output Files Per Job: 1

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Created: 2015-09-15 16:23:00-05:00
Creator: mengel@fnal.gov
VO Role: Production
Param Overrides:
cs_split_type: None
cs_split_dimensions: None
cs_last_split: None
Active: True

- Campaign Submission Files
- Launch Campaign Jobs Now
- Kill Jobs for Campaign
- Schedule Future Job Launches

Campaign Definition

Name: Nova raw2root keepup ND numi
Creator: vito@fnal.gov
Created: 2016-03-29 23:57:37.915941-05:00
Launch Script: /nova/app/home/nova-pro/OPOS/keepup/ProductionKeepup_preprod.sh
Definition Parameters: [{"--configfile":"","ConfigFile/Config_Raw2Root_01_45.cfg"}, {"--poms":"",""}]
Input Files Per Job: 0
Output Files Per Job: 0
Output File Patterns: None

Tags

Enter tag



Recent Launch Outputs

- outfile.log
- 20160617_014506
- 20160617_014501
- 20160616_014501
- 20160615_014501
- 20160614_014501
- 20160613_014501
- 20160612_014502
- 20160611_014501
- 20160610_014501
- 20160609_014501
- 20160608_014501

Launch Template

Name: Raw2Root ND numi
Launch Host: novagpvm01.fnal.gov
Launch Account: vito
Launch Setup: echo here
Creator: vito@fnal.gov
Created: 2016-03-29 23:56:25.439389-05:00

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[Home](#) / Submission file info for campaign NOvA Reco Keepup

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File Info by Submission ?

Days ending

[<previous days](#) | [next days >](#)



jobsub_jobid ?	project ?	date ?	submitted ?	delivered SAM ?	delivered logs ?	consumed ?	failed ?	skipped ?	w/some kids declared ?	w/all kids declared ?	kids in flight ?	w/kids located ?	pending ?
11100644.0@fifebatch2.fnal.gov	ahandres-ahandres-reco-keepup-Offsite-2000-S16-03-04-neardet-numi-3_days_ago-20160617_0210	2016-06-17 07:10	37	12	0	12	0	0	12	12	0	12	25
11100679.0@fifebatch2.fnal.gov	ahandres-ahandres-reco-keepup-Offsite-3000-S15-12-07-fardet-numi-3_days_ago-20160617_0208	2016-06-17 07:13	912	547	0	397	0	150	0	0	0	0	912
11100731.0@fifebatch2.fnal.gov	ahandres-ahandres-reco-keepup-Offsite-2000-S16-03-04-neardet-BNB-3_days_ago-20160617_0220	2016-06-17 07:20	37	37	0	37	0	0	37	37	0	37	0

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Info by day ?

Days ending

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day ?	date ?	requested files ?	delivered files ?	jobs ?	failed ?	outfiles ?	pending ?	No exitcode ?	exit(0) ?	exit(1) ?	exit(2) ?	exit(65) ?	exit(137) ?
Friday	2016-06-17	995	445	209	173	0	0	209	0	0	0	0	0
Thursday	2016-06-16	617	602	132	15	0	0	0	132	0	0	0	0
Wednesday	2016-06-15	611	602	134	4	0	0	0	134	0	0	0	0
Tuesday	2016-06-14	448	448	97	0	0	0	0	97	0	0	0	0
Monday	2016-06-13	653	643	145	6	0	0	0	145	0	0	0	0
Sunday	2016-06-12	951	951	200	0	0	0	0	200	0	0	0	0
Saturday	2016-06-11	1068	1058	225	8	0	0	0	225	0	0	0	0

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Campaign NOvA Reco Keepup ?

2016-06-16 11:20 to 2016-06-17 11:20



Campaign NOvA Reco Keepup

<previous 1 days | next 1 days >

NOvA Reco Keepup Submissions

Job States

Active	In 1.000000 day ending 2016-06-17 11:20	Idle	Running	Held	Completed	Located	Removed
0	18	60	197			0	0

2016-06-16 11:20

2016-06-17 11:20

11100644.0@2

11100679.0@2

11100731.0@2

11100878.0@2

7454862.0@1

7552326.0@1

7553211.0@1

7553881.0@1

7454862.0@1@2016-06-16 16:26:11.521885+00:00: Held

pomsgpvm01.fnal.gov/poms/show_task_jobs?t...

2016-06-17 11:20

Demo

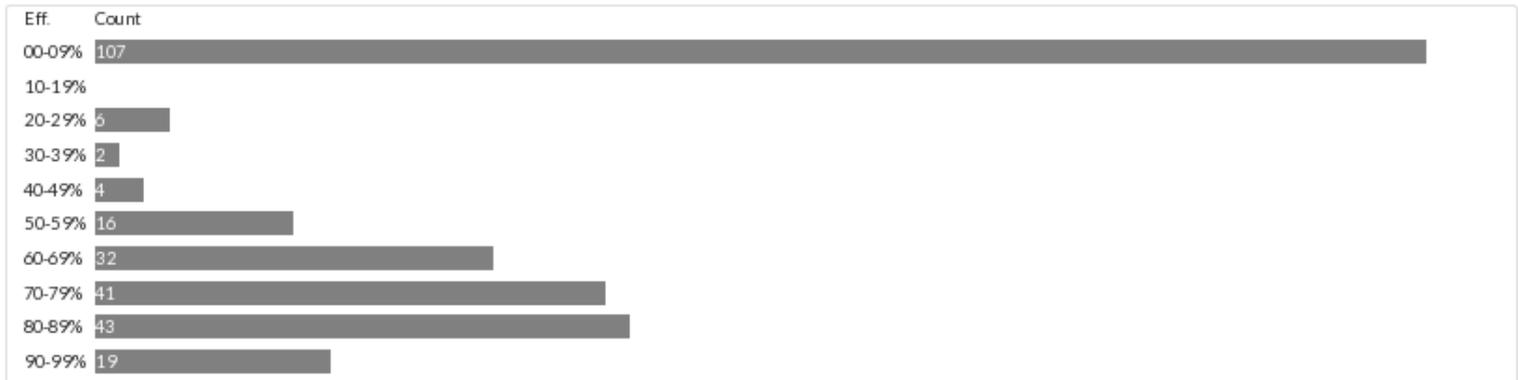
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Jobs efficiency in campaign 17

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Campaign NOVA Reco Keepup Job Efficiency ?



Note: jobs without cpu time/wallclock time in Condor stats are omitted.

Demo